Y521 – Spring 2012
Examination 2 – <mark>due April 10, 2012</mark>.

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In your responses focus on the important aspects of the questions and avoid providing irrelevant information or considerations. This examination is an opportunity to review the content of the course – please do not copy from the book, notes or articles except when explicitly asked to do so. The space provided to answer each question gives you an indication of what might be required to give a complete response.

For this examination you can use your notes and all articles we read. Answer all questions in the spaces provided. The exam has a total of 35 points.

1. If you were interested in studying the concept of "political engagement" among undergraduate U.S. students, describe **two** different **methods** that could be used to **collect data** about this concept, and for each method briefly explain what would determine the kind of data collected. **[4]**

   (1) Method: Semi-structured Interview

   This would yield qualitative data based on a purposeful selection of participants (undergraduate students) should the study be done at one particular institution (or sub-group within that institution). This data would provide insight into the participant's perception of their political engagement, including the activities they consider to fall under the term (as guided by the researcher through questions), and their perceived involvement level.ok

   (2) Method: Survey

   Surveys would also be a valuable method of data collection to explore this topic, and has the potential to yield quantitative as well as qualitative data (a mixed methods approach, perhaps). For this activity, however, it is most likely that the sample would be considered a nonprobabilistic sample (a convenience sample, based on voluntary response, and depending on the range of schools and students contacted), which can produce numerical data ("How many hours/events…") and qualitative data ("What motivates you to…"), both of which would allow for an exploration of this concept. ok

   > **Comment [gd1]:** Why are you saying this? Survey research is mostly associated with representative sample.

2. Knoblauch & Woolfolk Hoy (2008)[1] report some information about the reliability of the scores on the "collective efficacy scale" on p. 170. Report this information and explain what it means. **[2]**

Knoblauch & Woolfolk Hoy (2008) report the reliability coefficient (Cronbach's α) for the short form Collective Efficacy Scale to be .87. On this Scale the researchers administered to the students, there were a total of 12 questions – 6 positively worded, and 6 negatively worded (and then negatively scored). The Cronbach's α of .87 suggests that the positively worded questions and negatively worded (and reverse scored) questions answered the same questions in a reliable way (as the maximum would be a perfect 1.0 α). Therefore, the questions on the scale are considered reliable for

> **Comment [gd2]:** Ok but you are not explaining what kind of reliability this is?

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[1] The teacher self-efficacy study

researching the constructs being researched. Furthermore, the authors relate this Cronbach's α to other scales, finding that it has reasonable validity.
[-1]

3.   What are the samples used in Hew & Hara's study[2]? What is (are) the unit(s) of analysis? Make sure to support your answer with evidence from the article **[5]**

For this study, there were two samples: The messages sent through the listserv examined between 2003 and 2006 (total of 576 messages), and the 20 (17 female, 3 male) teachers who were interviewed, as indicated on p.578 of the study. These samples can be classified as a purposeful and convenience sample in this qualitative study.

For this study, the units of analysis are (1) the categories of knowledge being shared by teachers, and (2) motivational and hindering factors for teachers to share knowledge. (as indicated on p. 575 of the study).
Your response is not entirely clear here [-1]

4. Explain the sample to population "logic of inference" in large sample studies using quantitative data. **[3]**

Because in most cases it is impossible to observe/collect data from every single member of a target population, researchers utilize sample populations in order to make inferences to the larger target population. This sample is a smaller number of that specific target population, and can consist of one of two samples (a probabilistic sample, where each member of that population has an equal chance of being included in the sample) or non-probablistic (typically due to convenience). The logic is that this sample will produce data very similar to the larger target population, allowing the researcher to examine trends, commonalities, and explore correlations (and, in the case of probabilistic samples, allow for statistical inferences as well). ok

5. In a study investigating the impact of *stress* on *physical performance*, and on *satisfaction with the performance*, the researcher finds the following results. Based on this information answer questions 5.1 to 5.3

Variables	High Stress (n=20)		Low Stress (n=20)		
	Mean	SD	Mean	SD	*t*
Perform. rating	4.33	6.03	3.07	3.96	.58
Satisfaction	2.00	2.48	9.07	9.11	3.18*

*$p < 0.05$

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[2] Hew, K. F. & Hara, N. (2007). Empirical study of motivators and barriers of teacher online knowledge sharing.

(5.1)   For **performance rating** does the analysis indicate a statistically significant difference? Explain what t=.58 means—what does the number .58 mean? **[2]**

Because the p value is not indicated for performance rating on the chart, there is no statistical difference between the two sets of data. Furthermore, analysis of the t score for performance rating when looked at against the t-table shows no statistical significance.

t=.58 means that the difference between the two scores for performance rating is .58 of 1 standard error of diff. unit, suggesting that this is not statistically significant, as it falls within the 68.2% one standard deviation or less from the mean.

(5.2)   Explain the meaning of the difference in standard deviation between the two groups for **satisfaction**. **[1]**

The difference between the standard deviations of the two groups suggests that the Low Stress group scored with a higher variance from the mean of the scores, while the High Stress group scored closer, on average, to the mean.
[-1]

(5.3)   Based on these test statistics write a sentence to characterize the **difference in satisfaction between the two stress groups [1]**

Based on these test statistics, there was a statistically significant difference between the two tested groups, with the Low Stress group reporting higher satisfaction, with a greater variability than the High Stress group. ok

6.   In conducting a study to examine the relationship between *undergraduate students' satisfaction* with a finite mathematics course, their *anxiety,* and the *instructor's perceived enthusiasm* the researcher founds the following correlation coefficients:

Pearson Correlation Coefficients

	Enthusiasm	Anxiety
Satisfaction	.13 (p=.083)	-.38 (p=.045)

Based on these data, write a sentence to characterize the meaning of the following relationships. Make sure to comment on the statistical significance of these results (answer questions 6.1 to 6.2):

 (6.1)   *Relationship between Students' satisfaction and instructor's enthusiasm*?   **[2]**

There is no correlation between the two, as the r (Pearson Correlation Coefficient) is near 0 – Is this corr. statistically sig. or not? Why? [-1]

4

(6.2)   *Relationship between Students' satisfaction and Anxiety?*   **[2]**

There is a ~~slightly~~ moderate negative correlation, based on the negative Pearson Coefficient (-.38). and what does this mean? Is it sig. or not? [-1]

7.   Using Oakes & Guiton proposition 4, report and explain evidence of triangulation? Specify (write it out and use page numbers) what evidence you consider and what type of triangulation it represents. **[3]**

In the discussion about proposition 4, evidence surrounding the triangulation of data can be found through the examination of teacher perceptions on ethnicity and ability (as shown on p. 18, where the teacher from Washington High School discusses the motivation and study habits of Asian students; as well as on p. 19 with a discussion on some Latino and African American students not fitting the socioeconomic stereotypes of the rest of those with in the school), while examining the enrollment opportunities within specific course tracks (vocational tracks on p. 16 with higher amounts of Latino and African-American students vs. college-prep tracks with higher likelihood of Asian and White students on p.20-21). This triangulation serves to provide two lenses with which to confirm the proposition described, though there may have been no conscious attempt by the teachers or school administrators to perpetuate this proposition. Ok.

8.   Find a proposition for which Oakes & Guiton report disconfirming evidence. Report this evidence (with page numbers) and explain how it is disconfirming. **[3]**

In their discussion on Proposition 5 (Structural Regularities Constrain Curriculum Adaptations), Oakes & Guiton report the instances of the structural constraints that benefited some students at the McKinley school: "Thus, structural constrains worked somewhat to counterbalance beliefs about accommodation that might have otherwise led to even fewer college-prep opportunities for the minority students at McKinley" (p. 25). This instance is disconfirming evidence as it counters claims made earlier in the discussion of the proposition on p. 23, which focused on the discussion of an equalizing curriculum based on state requirements and achievement scores, which would limit the opportunities for students with lower achievement scores for inclusion in the college prep courses. It is not entirely clear here what disconfirms what? [-1]

> **Comment [gd10]:** Ok but this is supporting the proposition right?

> **Comment [gd11]:** Ok but the question asks for disconfirming evidence with regard to the proposition??

9.   If we distinguish between three broad methods of qualitative data analysis (a) system of codes or categories (taxonomy, concept), (b) a set of empirical assertions (analytic induction), and (c) narrative structuring, what kind of method of data analysis appears to have been used Tholander (2011). Support your answer with evidence from the article **[3].**

On reading the Tholander (2011) article, it is evident that Tholander has analyzed the data using a set of empirical assertions. This is indicated by the categories he has identified throughout his paper, and the manner of analysis of the excerpt conversation

> **Comment [gd12]:** ??

> **Comment [gd13]:** Isn't this more aligned with a system of codes and categories??

presented on page 38. In his article, Tholander examines this one exchange, and breaks it apart into the components he has identified, categorizing each piece of the conversation, supporting his assertions (the topic titles) with these snippits of conversation.

[-1]

10. How could Knoblauch & Woolfolk Hoy (2008)[3] have strengthened the validity and the generalizability of the claims they make in their study. **[4]**

In order to strengthen the validity and generalizability of their claims on student teacher self-efficacy, the researchers should consider several items. First, this sample is not a probabalistic sample – a larger pool of student teacher from a variety of institutions across the country would strengthen the generalizability of the claims made in this paper. The authors also discuss the importance of collecting qualitative data and not just quantitative data – as discussed on page 176, self-efficacy is not only numbers. The researchers propose the collection of journals, interviews, and reflective pieces to strengthen the study. This would be an advisable step, as it would allow for common themes and trends to emerge that may not be identified on the scales administered on the student teachers, and provide an opportunity to triangulate the data and reinforce or disconfirm other evidence. Ok but you are just retelling what the researchers already point out as limitations of the study. What else could they have done from your point of view?

28/35

Feedback about this examination

What do you think about the questions on this examination (i.e., difficulty, relevance, fairness etc.)?

While shorter in length than the previous exam, I felt that this exam was just as challenging, though it did not rely as heavily on philosophy. The questions, while fair, do demand a short and very focused answer – which at times, I found difficult to give, as I was not sure I entirely answered the question. I find that while going through this exam, I have much to learn about statistics and interpreting quantitative data, although the questions asked were very relevant to the contents presenting in articles and class. More practice with the analysis concepts will help strengthen my understanding.

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[3] The teacher self-efficacy study

Evaluate your performance on this examination.

Based on this examination, I see that I still have much to learn about the interpretation and meanings of quantitative data, as I am not entirely comfortable making interpretations, assertions, and judgments based on this type of data, and would argue that this is my weakest portion of the test.